

Claims:

Feb 1

1. A conjugated poly(1,4-arylene vinylene) compound comprising an arylene unit having adjacent substituents, said substituents being oriented such as to affect the electronic structure of the compound sufficiently to cause a blue-shift in the photoluminescence and/or electroluminescence of the compound.
2. A compound according to claim 1, wherein the substituents are independently selected from:
 - (i) R-, RO-, RS-, and RR'N-
wherein R and R' are independently: a straight or branched chain alkyl group, alkenyl group, or alkynyl group having 1-10 carbon atoms; an aryl group; or an aromatic or non-aromatic heterocyclic group; and
 - (ii) a group in which the adjacent substituents together form a cyclic group, the cyclic group containing, in addition to the two carbon atoms of the arylene unit to which it is attached, 1-10 carbon atoms and 0 or 1-6 hetero atoms selected from O, S and N.
3. A compound according to claim 2, wherein the cyclic group contains 2-6 hetero atoms.
4. A compound according to *any preceding claim*, wherein one or both of the adjacent substituents are independently selected from a branched alkyl group and a branched alkoxy group.
5. A compound according to *any preceding claim*, wherein each of the carbon atoms at the adjacent substituted positions of the aryl unit is attached to its substituent via a hetero atom, selected from O, S or N.
6. A compound according to *any preceding claim*, wherein the substituents are solubilising substituents.

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Claim 1
 7. A compound according to any preceding claim, wherein one or both of the adjacent substituents are independently selected from butyloxy, ethylhexyloxy and 3',7-dimethyloctyloxy groups.

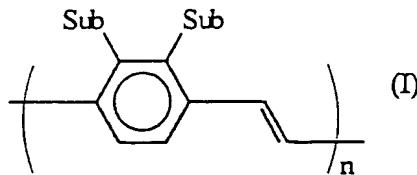
~~Claim 1~~
 8. A compound according to any preceding claim, wherein the arylene unit is a fluorene unit, a phenyl unit, a thiophenyl unit, a naphthalene unit, a pyridine unit, a quinoline unit, a quinoxaline unit, or a unit comprising a thiophenylene and a phenylene.

Claim 1
 9. A compound according to any preceding claim, wherein the poly(arylene vinylene) is a copolymer comprising a fluorescent unit carrying a distyryl-2,3-substituted-benzene fragment.

~~Claim 1~~
 10. A compound according to any preceding claim, which is a poly(phenylene vinylene) compound.

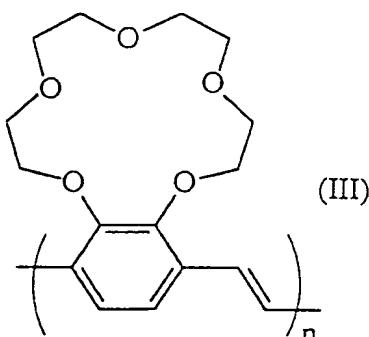
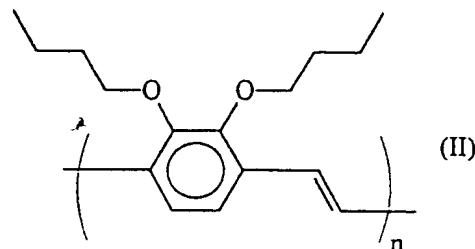
Claim 1
 11. A compound according to claim 10, wherein the adjacent substituents are in the 2-position and the 3-position of the phenylene residue.

12. A compound according to claim 11, of formula (I):



wherein Sub is a substituent as defined in any of claims 1-7, the vinylene unit may be a trans vinylene unit or a cis vinylene unit, and n is the number of units of the formula in the polymer.

13. A compound according to claim 11, of formula (II) or formula (III):



wherein the vinylene unit may be a trans vinylene unit or a cis vinylene unit, and n is the number of units of the respective formula in the polymer.

Sub 2 14. A method for the production of a compound as defined in ~~any preceding claim~~, which method comprises polymerising a bis(halomethyl) substituted aryl monomer in the presence of a base to form a poly(arylene vinylene), wherein the aryl monomer has adjacent substituents on the aryl residue.

15. A method according to claim 14, wherein the monomer is a bis(chloromethyl), bis(bromomethyl) or bis(iodomethyl) monomer.

Sub 2 16. A method according to claim 14-~~or~~ claim-15, wherein the base is potassium tertiary butoxide.

17. A component or device comprising a compound as defined in ~~any of claims 1-13~~.

Further comprising

18. A component or device according to claim 17, ~~which is an electric, electronic, optical or optoelectronic component or device.~~

19. A component or device according to claim 17, ~~or claim 18, which is a photoluminescent or electroluminescent component or device.~~

20. A light emitting diode comprising a component or device as defined in ~~any of claims 17-19.~~

21. A method for producing a component or device ~~as defined in any of claims 17-20, which method comprises coating a solution of a compound as defined in any of claims 1-13 onto a substrate to form a film.~~

22. A method according to claim 21, wherein the substrate is ITO.

23. A method according to claim 21 ~~or claim 22, wherein the solution is a chloroform solution.~~

24. A method according to ~~any of claims 21-23, wherein the solution is spin-coated onto the substrate.~~

25. Use of a light emitting diode as defined in claim 20, in an electric, electronic, optical or optoelectronic component or device.

26. Use of a poly(arylene vinylene) compound comprising an arylene unit having adjacent substituents, in an electric, electronic, optical or optoelectronic component or device for producing blue-shifted electroluminescence or photoluminescence in said device.

27. Use according to claim 26, wherein the adjacent substituents are as defined in any of claims 1-7.

28. Use according to claim 26 or claim 27, wherein the arylene unit is as defined in any of claims 8-13.

29. Use according to any of claims 26-28, wherein the electric, electronic, optical or optoelectronic component or device is a light emitting device, such as a light emitting diode.

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